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Frank C. Eisenschenk
Frank C. Eisenschenk, Ph.D., Patent Attorney

SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT
Patent Application
Docket No. ARS-130
Serial No. 10/591,091

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 2161
Applicants : Daniel Domine, Cedric Merlot
Serial No. : 10/591,091
Filed : August 29, 2006
Conf. No. : 4351
For : Method for Fast Substructure Searching in Non-Enumerated Chemical Libraries

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 AND 1.98

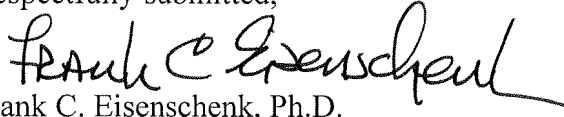
Sir:

In accordance with 37 C.F.R. § 1.56, the references listed on the attached form PTO/SB/08 are being brought to the attention of the Examiner for consideration in connection with the examination of the above-identified patent application. A copy of each cited reference is attached. However, Applicants have not submitted copies of the U.S. patents cited on attached Form PTO/SB/08 pursuant to 37 C.F.R. § 1.98(a)(2)(ii).

It is respectfully requested that the references cited on the attached form PTO/SB/08 be considered in the examination of the subject application and that their consideration be made of record.

Applicants respectfully assert that the substantive provisions of 37 C.F.R. §§ 1.97 and 1.98 are met by the foregoing statement.

Respectfully submitted,



Frank C. Eisenschenk, Ph.D.

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Attachments: Form PTO/SB/08; copies of references cited therein.

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	10/591,091
Filing Date	August 29, 2006
First Named Inventor	Daniel Domine
Art Unit	2161
Examiner Name	
Attorney Docket Number	ARS-130

Sheet	1	of	5
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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
	U1	US-6,377,895 B1	04-23-2002	Horlbeck, E.	All
	U2	US-6,253,618 B1	07-03-2001	Wooh, S.	All
	U3	US-6,304,869 B1	10-16-2001	Moore, <i>et al.</i>	All
	U4	US-6,061,636	05-09-2000	Horlbeck, E.	All
	U5	US-5,880,972	03-09-1999	Horlbeck, E.	All
	U6	US-5,577,239	11-19-1996	Moore, <i>et al.</i>	All
	U7	US-4,642,762	02-10-1987	Fisanick, W.	All
	U8	US-5,418,944	05-23-1995	DiPace, <i>et al.</i>	All
	U9	US-6,185,506 B1	02-06-2001	Cramer, <i>et al.</i>	All
	U10	US-6,240,374	05-29-2001	Cramer, <i>et al.</i>	All

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
	F1	WO 02/233596 A2	04-25-2002	Applied Research Systems ARS Holding N.V.	All	
	F2	EP 0 196 237 B1	06-17-1992	Japan Association for International Chemical Information	All	
	F3					
	F4					

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	R1	BARNARD, J. "Identifying and Finding Compounds in Combinatorial Libraries", Presented to CINF Division Symposium at ACS National Meeting, Chicago IL, August 26, 2001.	
	R2	BALENT, M.Z. <i>et al.</i> "A Unique Chemical Fragmentation System for Indexing Patent Literature", <i>Journal of Chemical Information and Computer Sciences</i> , 1975, pp. 100-104, Vol. 15, No. 2.	
	R3	BARNARD, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 2. GENSAL, a Formal Language for the Description of Generic Chemical Structures", <i>J. Chem. Inf. Comput. Sci.</i> , 1981, pp. 151-161, Vol. 21, No. 3.	
	R4	BARNARD, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Structures in Chemical Patents. 4. An Extended Connection Table Representation for Generic Structures", <i>J. Chem. Inf. Comput. Sci.</i> , 1982, pp. 160-164, Vol. 22, No. 3.	
	R5	BARNARD, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 6. An Interpreter Program for the Generic Structure Description Language GENSAL", <i>J. Chem. Inf. Comput. Sci.</i> , 1984, pp. 66-71, Vol. 24, No. 2.	
	R6	BARNARD, J. <i>et al.</i> "A Comparison of Different Approaches to Markush Structure Handling", <i>J. Chem. Inf. Comput. Sci.</i> , 1991, pp. 64-68, Vol. 31, No. 1.	
	R7	BARNARD, J. <i>et al.</i> "Substructure Searching Methods : Old and New", <i>J. Chem. Inf. Comput. Sci.</i> , 1993, pp. 532-538, Vol. 33, No. 4.	
	R8	BARNARD, J. <i>et al.</i> "Use of Markush Structure Techniques to Avoid Enumeration in Diversity Analysis of Large Combinatorial Libraries", Daylight Chemical Information Systems MUG97 meeting, February 11, 1997, pp. 1-10.	
	R9	BARNARD, J. <i>et al.</i> "Computer Representation and Manipulation of Combinatorial Libraries", <i>Perspectives in Drug Discovery and Design</i> , 1997, pp. 13-30, Vol. 7, No. 8.	
	R10	BARNARD, J. <i>et al.</i> "Use of Markush structure analysis techniques for descriptor generation and clustering of large combinatorial libraries", <i>J. Mol. Graphics and Mod.</i> , August-October 2000, pp. 452-463, Vol. 18.	
	R11	BARNARD, J. <i>et al.</i> "Use of Markush Structure-Analysis Techniques for Rapid Processing of Large Combinatorial Libraries", CINF5, 1999, pp. 1.	
	R12	CRAMER, R. <i>et al.</i> "Virtual Compound Libraries: A New Approach to Decision Making in Molecular Discovery Research", <i>J. Chem. Inf. Comput. Sci.</i> , 1998, pp. 1010-1023, Vol. 38, No. 6.	

Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	10/591,091
Filing Date	August 29, 2006
First Named Inventor	Daniel Domine
Group Art Unit	2161
Examiner Name	
Attorney Docket Number	ARS-130

Sheet	3	of	5
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NON PATENT LITERATURE DOCUMENTS

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	R13	DOWNS, G. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 9. An Algorithm to Find the Extended Set of Smallest Rings in Structurally Explicit Generics", <i>J. Chem. Inf. Comput. Sci.</i> , 1989, pp. 207-214, Vol. 29, No. 3.	
	R14	DOWNS, G. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 10. Assignment and Logical Bubble-Up of Ring Screens for Structurally Explicit Generics", <i>J. Chem. Inf. Comput. Sci.</i> , 1989, pp. 215-224, Vol. 29, No. 3.	
	R15	DOWNS, G. <i>et al.</i> "Techniques for Generating Descriptive Fingerprints in Combinatorial Libraries", <i>J. Chem. Inf. Comput. Sci.</i> , 1997, pp. 59-61, Vol. 37, No. 1.	
	R16	Electronic Dissertations Library, 2002, pp. 1-22.	
	R17	GILLET, V. <i>et al.</i> "Computer Storage and Retrieval of Generic Computer Structures in Patents. 7. Parallel Simulation of a Relaxation Algorithm for Chemical Substructure Search", <i>J. Chem. Inf. Comput. Sci.</i> , 1986, pp. 118-126, Vol. 26, No. 3.	
	R18	GILLET, V. <i>et al.</i> "Computer Storage and Retrieval of Generic Computer Structures in Patents. 8. Reduced Chemical Graphs and Their Applications in Generic Chemical Structure Retrieval", <i>J. Chem. Inf. Comput. Sci.</i> , 1987, pp. 126-137, Vol. 27, No. 3.	
	R19	HOLLIDAY, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Computer Structures in Patents. 14. Fragment Generation from Generic Structures", <i>J. Chem. Inf. Comput. Sci.</i> , 1992, pp. 453-462, Vol. 32, No. 5.	
	R20	HOLLIDAY, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Computer Structures in Patents. 15. Generation of Topological Fragment Descriptors from Nontopological Representations of Generic Structure Components", <i>J. Chem. Inf. Comput. Sci.</i> , 1993, pp. 369-377, Vol. 33, No. 3.	
	R21	HOLLIDAY, J. <i>et al.</i> "Computer Storage and Retrieval of Generic Computer Structures in Patents. 17. Evaluation of the Refined Search", <i>J. Chem. Inf. Comput. Sci.</i> , 1995, pp. 659-662, Vol. 35, No. 4.	
	R22	KABACK, S. "Chemical Structure Searching in Derwent's World Patents Index", <i>J. Chem. Inf. Comput. Sci.</i> , 1980, pp. 1-6, Vol. 20, No. 1.	
	R23	KUDO, Y. <i>et al.</i> "Chemical Substance Retrieval System for Searching Generic Representations. 1. Prototype System for the Gazetted List of Existing Chemical Substances of Japan", <i>J. Chem. Inf. Comput. Sci.</i> , 1983, pp. 109-117, Vol. 23, No. 3.	
	R24	LELAND, B. <i>et al.</i> "Managing the Combinatorial Explosion", <i>J. Chem. Inf. Comput. Sci.</i> , 1997, pp. 62-70, Vol. 37, No. 1.	

Examiner Signature	Date Considered
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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>			Complete if Known		
			Application Number	10/591,091	
			Filing Date	August 29, 2006	
			First Named Inventor	Daniel Domine	
			Group Art Unit	2161	
Examiner Name					
Sheet	4	of	5	Attorney Docket Number	ARS-130

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	R25	LOBANOV, V. <i>et al.</i> "Scalable Methods for the Construction of Analysis of Virtual Combinatorial Libraries", <i>Combinatorial Chemistry & High Throughput Screening</i> , 2002, pp. 167-178, Vol. 5, No. 2.		
	R26	LYNCH, M. <i>et al.</i> "Generic Chemical Structures in Patents (Markush Structures): The Research Project at the University of Sheffield", <i>World Patent Information</i> , 1986, pp. 85-91, Vol. 8, No. 2.		
	R27	LYNCH, M. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 1. Introduction and General Strategy", <i>J. Chem. Inf. Comput. Sci.</i> , 1981, pp. 148-150, Vol. 21, No. 3.		
	R28	LYNCH, M. <i>et al.</i> "The Sheffield Generic Structures Project – a Retrospective Review", <i>J. Chem. Inf. Comput. Sci.</i> , 1996, pp. 930-936, Vol. 36, No. 5.		
	R29	MERLOT, C. <i>et al.</i> "Fragment analysis in small molecule discovery", <i>Current Opinion in Drug Discovery & Development</i> , 2002, pp. 391-399, Vol. 5, No. 3.		
	R30	MEYER, E. <i>et al.</i> "Experiences with input, translation, and search in files containing Markush formulae", 1984, pp. 83-95.		
	R31	MEYER, E. "Computer Representation and Handling of Structures: Retrospect and Prospects", <i>J. Chem. Inf. Comput. Sci.</i> , 1991, pp. 68-75, Vol. 31, No. 1.		
	R32	MILLER, M. "Chemical Database Techniques in Drug Discovery", <i>Nature Review Drug Discovery</i> , March 2002, pp. 220-227, Vol. 1.		
	R33	NAKAYAMA, T. "Computer Representation of Generic Chemical Structures by an Extended Block-Cutpoint Tree", <i>J. Chem. Inf. Comput. Sci.</i> , 1983, pp. 80-87, Vol. 23, No. 2.		
	R34	OLENDER, R. <i>et al.</i> "A Fast Algorithm for Searching for Molecules Containing a Pharmacophore in Very Large Virtual Combinatorial Libraries", <i>J. Chem. Inf. Comput. Sci.</i> , 2001, pp. 731-738, Vol. 41, No. 3.		
	R35	ROSSLER, S. <i>et al.</i> "The GREMAS System, an Integral Part of the IDC System for Chemical Documentation", <i>The Journal of Chemical Documentation</i> , 1970, pp. 128-134, Vol. 10, No. 2.		
	R36	ROWLETT, R. "Cleaning Patents with Chemical Abstracts", <i>Chemtech</i> , June 1979, pp. 348-349.		

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	R37	SCHMUFF, N. "A Comparison of the MARPAT and Markush DARC Software", <i>J. Chem. Inf. Comput. Sci.</i> , 1991, pp. 53-59, Vol. 31, No. 1.	
	R38	SHI, S. <i>et al.</i> "Efficient Combinatorial filtering for desired molecular properties of reaction products", <i>Journal of Molecular Graphics and Modelling</i> , 2000, pp. 478-496, Vol. 18.	
	R39	SILK, J. "Present and Future Prospects for Structural Searching of the Journal and Patent Literature", <i>J. Chem. Inf. Comput. Sci.</i> , 1979, pp. 195-198, Vol. 19, No. 4.	
	R40	STIEGLER, G. <i>et al.</i> "Automatic Translation of Gensal Representations of Markush Structures Into Gremas Fragment Codes at IDC", <i>Chemical Structures</i> , 1993, pp. 105-114, Vol. 2.	
	R41	WELFORD, S. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 3. Chemical Grammars and Their Role in the Manipulation of Chemical Structures", <i>J. Chem. Inf. Comput. Sci.</i> , 1981, pp. 161-168, Vol. 21, No. 3.	
	R42	WELFORD, S. <i>et al.</i> "Computer Storage and Retrieval of Generic Chemical Structures in Patents. 5. Algorithmic Generation of Fragment Descriptors for Generic Structure Screening", <i>J. Chem. Inf. Comput. Sci.</i> , 1984, pp. 57-66, Vol. 24, No. 2.	
	R43	WIPKE, W.T. <i>et al.</i> "Generic queries in the MACCS system", <i>Computer Handling of Generic Chemical Structures</i> , Proceedings of a Conference organised by the Chemical Structure Association of the University of Sheffield, England, March 26-29, 1984, Gower, Aldershot, pp. 167-178.	
	R44		
	R45		
	R46		
	R47		
	R48		

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